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Open Relationships, Nonconsensual Nonmonogamy, and Monogamy Among U.S. Adults: Findings from the 2012 National Survey of Sexual Health and Behavior

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Abstract

People in open and other consensually nonmonogamous partnerships have been historically underserved by researchers and providers. Many studies group such partnerships together with nonconsensual nonmonogamy (NCNM) under the banner of “concurrent sexual partnerships.” Discrimination from service providers poses a substantial barrier to care. Responding to such concerns, this investigation explored sociodemographic correlates with open relationships and associations between relationship structure and sexual risk, HIV/STI testing, and relationship satisfaction in a nationally representative probability sample. Data were drawn from the 2012 National Survey of Sexual Health and Behavior (n = 2270). We used multinomial logistic regression to identify correlates with relationship structure, and linear and logistic regression to investigate associations between relationship structure and testing, condom use, and relationship satisfaction. Eighty-nine percent of participants reported monogamy, 4% reported open relationships, and 8% reported NCNM. Males, gay/lesbian individuals, bisexual individuals, and those who identified as “Other, Non-Hispanic” were more likely to report open relationships. Bisexual individuals and Black, Non-Hispanic participants were more likely to report NCNM; older participants were less likely to do so. Participants in open relationships reported more frequent condom use for anal intercourse and lower relationship satisfaction than monogamous participants. NCNM participants reported more HIV testing and lower satisfaction. Identities, experiences, and behaviors within open and other consensually nonmonogamous populations should be regarded as unique and diverse, rather than conflated with those common to other relationship structures. There is a need for greater awareness of diverse relationship structures among researchers and providers, and incorporation of related content into educational programming.

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Keywords

Consensual nonmonogamy; Open relationships; Sexual minorities; HIV and STI testing; Sexual behaviors; Relationship structure

Introduction

For several decades, sexual minority individuals in the U.S. have faced a disproportionate burden of physical, mental, and other health concerns relative to their heterosexual counterparts, including but not limited to HIV and other sexually transmitted infections (STIs) including syphilis, gonorrhea, and chlamydia. Early in the HIV epidemic, the Centers for Disease Control and Prevention have identified several such minority groups, including men who have sex with men (MSM) and women who have sex with women (WSW), as target populations for research and programmatic interventions (Centers for Disease Control and Prevention, 2015, 2017a, 2017b). Further, the National Institute on Minority Health and Health Disparities recently designated sexual and gender minority individuals as a health disparity population, stressing the unique challenges these groups face, including stigma and discrimination as barriers to health and well-being (Pérez-Stable, 2016).

Researchers have responded to these calls with numerous assessments of sexual behavior and health outcomes among lesbian, gay, bisexual, and transgender (LGBT) persons. Individuals in consensually nonmonogamous (CNM) relationships, however, remain notably underserved by researchers and practitioners. Yet these individuals are also sexual minorities (Herbenick et al., 2017) and stand to benefit from informed study and care. Like LGBT communities, CNM communities face social stigma in regard to their personal identities and relationships (Moors, Matsick, Ziegler, Rubin, & Conley, 2013). Such stigma may be particularly pronounced for nonmonogamous persons who also identify as LGBT. Actual and perceived prejudice among mental and medical health providers poses a substantial barrier to care for those who practice nonmonogamy (Graham, 2014; Henrich & Trawinski, 2016; Williams & Prior, 2015). Sexual and behavioral health interventions grounded in assumptions of monogamy, or that are designed to promote monogamy as an ideal moral and behavioral standard, may be inapplicable and even harmful.

Consensual nonmonogamous relationships may take numerous forms. These include polyamory, in which individuals are open to the possibility of forming loving relationships with multiple partners; polyfidelity, in which three or more individuals form a closed romantic partnership; open relationships, in which couples typically retain emotional intimacy within a primary relationship and pursue additional casual and/or sexual partnerships; and swinging, in which couples pursue extradyadic sex (Barker & Langdridge, 2010; Grunt-Mejer & Campbell, 2016; Kimberly & Hans, 2017; Klesse, 2006). What unites these relationship structures is that the individuals involved agree to nonmonogamy and communicate openly with one another about that decision. This is distinct from situations in which people in ostensibly monogamous partners have extradyadic sexual encounters without their partners' permission; such relationships are characterized by nonconsensual nonmonogamy (NCNM). Until recently, studies have not examined the prevalence and

characteristics of various forms of consensual nonmonogamy in the general population of the U.S. Conley, Moors, Matsick, and Ziegler (2012a) estimated that approximately 4% of adults in the US engage in consensual nonmonogamy, but relied on nonprobability samples. For comparison, the Williams Institute estimates that approximately 3.5% of U.S. adults identify as LGB and 0.3% identify as transgender (Gates, 2011). Utilizing two US Census-based quota samples to explore the prevalence of CNM experiences, Haupert, Gesselman, Moors, Fisher, and Garcia (2016) found that more than 20% of single adults in the U.S. reported prior experiences with CNM relationships. Using a probability sample of U.S. adults, Herbenick et al. (2017) found that 1.6% of those in relationships described their partnerships as “open”.

Prior to the emergence of research specific to open relationships, polyamory, and other forms of CNM, studies of nonmonogamy typically focused on infidelity (see Barker & Langdridge, 2010 for an overview of this literature). Scholarship on CNM, which has expanded tremendously over the past two decades, has been dominated by social science scholars in fields such as counseling psychology and sociology. Researchers have documented relationship structures and community politics among subgroups within the broader category of CNM (Conley, Ziegler, Moors, Matsick, & Valentine, 2012b; Klesse, 2006), the conceptualization of CNM as a lifestyle descriptor and/or sexual identity or orientation (Klesse, 2014; Tweedy, 2010), and social perceptions of CNM partnerships (Conley et al., 2012a, 2012b; Grunt-Mejer & Campbell, 2016; Hutzer, Giuliano, Herselman, & Johnson, 2016; Moors et al., 2013). Many have noted pervasive negative stereotyping of CNM relationships and the individuals who choose them. Consensually nonmonogamous relationships are often regarded as less moral, less sexually satisfying, lower in quality, and more sexually risky than monogamous relationships. However, such stereotyping may be due to conflations of consensual monogamy with non-consensual nonmonogamy (i.e., infidelity or cheating). The ideology of mononormativity, which presumes that monogamous partnerships are the most natural and most acceptable, certainly also contributes to negative stereotyping (Barker & Langdridge, 2010; Grunt-Mejer & Campbell, 2016; Hutzer et al., 2016).

Several studies have utilized empirical research with nonmonogamous and monogamous communities to debunk negative stereotypes. In an online nonprobability sample, Lehmiller found that compared with individuals in monogamous partnerships (one quarter of whom reported infidelity/NCNM), those in CNM partnerships were more likely to use condoms with primary partners, more likely to use condoms with extradyadic partners, and more likely to get tested for STIs (Lehmiller, 2015). Also working with an online nonprobability sample, Conley, Moors, Ziegler, and Karathanasis (2013) found similar patterns when comparing NCNM with CNM relationships. In a comprehensive review of the literature, Rubel and Bogaert (2015) noted that individuals in monogamous and CNM partnerships tended to report similar relationship quality and psychological well-being (see also Conley et al., 2012b; Mogilski, Memering, Welling, & Shackelford, 2017). Yet misconceptions persist. Many individuals, including health and social services providers, continue to draw on misinformation and erroneous stereotypes when engaging with people in CNM relationships (Graham, 2014; Henrich & Trawinski, 2016; Hutzer et al., 2016; Williams & Prior, 2015). This may pose a considerable barrier to care. In some instances, providers have

openly condemned patients/clients' partnerships and moral character, to the point of attributing unrelated conditions such as clinical depression to nonmonogamy. Some have attempted to force their patients/clients to adopt monogamous lifestyles, and sever ties with partners whose support might otherwise have been recognized as a protective factor against health risks. People who disclose participation in CNM may reduce or discontinue treatment if providers are hostile to them (Graham, 2014; Henrich & Trawinski, 2016).

For all its strengths, there are notable limitations to existing empirical research with CNM communities. Studies have frequently relied on small and/or nonprobability samples (Barker & Langdridge, 2010). Additionally, many such investigations have focused exclusively on polyamorous communities and omitted other subgroups such as swingers and people in open relationships (Henrich & Trawinski, 2016; Hutzer et al., 2016). This may produce conservative estimates of both sexual risk and stigmatizing experiences, as polyamorous communities tend to be relatively affluent and enjoy greater access to health care and networks of people in (or supportive of) CNM relationships (Klesse, 2013). Still another limitation concerns the relatively minimal attention granted to sexual health concerns. Studies of identity categories and social perceptions vastly outnumber studies concerning health practices and outcomes. While there is a notable literature within sexual and public health on concurrent sexual partnerships, such works often conflate consensual and nonconsensual nonmonogamy (Adimora et al., 2002; Adimora, Schoenbach, & Doherty, 2007; Cates et al., 2015; Morris, Kurth, Hamilton, Moody, & Wakefield, 2009; Warren et al., 2015). This is concerning for at least two reasons. First, this conflation prevents researchers from identifying any variation in risk and protective factors affecting these different relationship structures. Yet there are reasons to suspect that risks vary. For example, individuals who are open about and freely adopt nonmonogamy may be better positioned to negotiate safer sex practices and STI/HIV testing than those who violate relationship agreements by cheating (Conley et al., 2013). Second, this conflation contributes to anti-CNM stereotyping and therefore exacerbates the barriers to care for those who freely choose nonmonogamy (Graham, 2014; Henrich & Trawinski, 2016). Indeed, this literature often approaches nonmonogamy as inherently problematic and advocates for the reduction or elimination of concurrent sexual partnerships altogether. Researchers tend to focus on negative outcomes, such as sexual risk, without considering such matters as sexual pleasure, emotional support among partners, and satisfaction in relationships.

This study extends scholarship on open relationships, one form of consensual nonmonogamy, to address sexual health issues including safer sex practices and HIV/STI testing. It further extends sexuality scholarship on concurrent sexual partnerships through a simultaneous consideration of monogamous, open, and nonconsensually nonmonogamous partnerships. Finally, this study contributes to the broader literature on sexual minorities through the inclusion of open relationships within this category. Analyses address the following research questions: (1) what proportion of the U.S. adult population engages in open relationships? (2) What demographic characteristics are associated with open relationships? (3) Do HIV/STI testing behaviors vary by relationship structure (i.e., open relationship vs. monogamy vs. NCNM)? (4) Do safer sex practices vary by relationship structure? (5) Does satisfaction in main/primary relationships vary by relationship structure?

Given the limitations of the literature on this community, we did not develop hypotheses and rather approached these questions as exploratory.

Method

Participants

This study relied on secondary data from the 2012 National Survey of Sexual Health and Behavior (NSSHB), a population-based cross-sectional survey of adult women and men in the U.S. Data were collected from October to November 2012 using the KnowledgePanel of GfK Research (Menlo Park, CA, USA). Research panels accessed through GfK Research are based on national probability sampling using random digit dialing and an address-based sampling frame that collectively cover approximately 98% of all U.S. households. To address sampling and nonsampling error, data were corrected with a post-stratification adjustment based on current demographic distributions reported by the US Bureau of the Census in the Current Population Survey. This produced the panel base weight utilized in this investigation. Further details regarding NSSHB methodology have been published elsewhere (Dodge et al., 2016; Herbenick et al., 2010). Our initial weighted sample included 3138 individuals who provided complete survey data. Those who reported not being in a relationship or who did not provide sufficient detail for the research team to determine their present relationship structure(s) (see below) were not included in the present analysis. The final sample included 2270 participants. All data were analyzed using Stata, version 11.2.

Measures

Demographic Characteristics—We incorporated measures for sex (male, female), sexuality (heterosexual, gay, lesbian, bisexual, other), gender identity (transgender, nontransgender), age (6 categories, ranging from 18–24 to 65+), annual household income (ordinal scale ranging from 0/less than $10,000 to 9/$100,000 or greater), education (less than high school, high school or GED, some college, bachelor's or higher), and race/ethnicity (White, Non-Hispanic; Black, Non-Hispanic; Other, Non-Hispanic; Hispanic). Due to sample size concerns, and an interest in incorporating sexuality and sex as separate variables, we collapsed the sexuality variable into three categories for data analysis including heterosexual, gay/lesbian, and bisexual/other.

Testing Behaviors—Participants were asked whether they had ever been tested for HIV. Those who said "yes" were then asked to report the approximate date of their most recent test. We used these data to develop a dichotomous measure (yes/no) for "HIV testing in the previous 6 months." We employed the same strategy to document "STI testing in the previous 6 months."

Safer Sex Practices—Participants were asked whether they had ever engaged in penile–vaginal intercourse. Those who said "yes" were then asked to report how many times they had used condoms during the previous 10 incidents. We utilized this as a linear outcome (protected incidents of penile–vaginal intercourse, 0–10). We used the same approach to identify participants who had previously engaged in penile–anal intercourse and, where appropriate, to calculate an outcome for protected incidents of anal intercourse.

It is important to note that it can be somewhat misleading to compare monogamous, open, and NCNM relationships in terms of HIV/STI testing and condom use. Provided that neither partner is HIV positive or has an STI, monogamy is substantially low risk. However, testing and safer sex practices are not irrelevant to monogamy (Conley, Matsick, Moors, Ziegler, & Rubin, 2015; Swan & Thompson, 2016). Monogamous individuals who are HIV positive and/or have STIs may or may not be aware of their status, and may or may not convey this to their partners. Individuals in ostensibly monogamous partnerships may engage in extradyadic sex without their partners' knowledge; in the NSSHB, those partners would then likely self-identify as monogamous rather than "supposedly monogamous." Where pregnancy is a possibility, individuals across relationship structures may be concerned with prevention and/or may negotiate safer sex practices with their partners. Moreover, it is consistent with prior literature to compare safer sex practices across monogamous, CNM, and NCNM relationship structures (Conley et al., 2012a, 2012b; Lehmiller, 2015).

Happiness in Primary Relationship—Participants were asked to describe "the degree of happiness, all things considered, in your relationship" on a scale ranging from 1 (very unhappy) to 7 (perfect). This measure was drawn from the Dyadic Adjustment Scale (Spanier, 1976).

Sexual Satisfaction in Primary Relationship—Participants were asked "how satisfied have you been with your sexual relationship" over the past 4 weeks, on a scale ranging from 1 (very dissatisfied) to 5 (very satisfied). This measure was Female Sexual Functioning Index (Rosen et al., 2000).

Relationship Structure—In a multiple-choice survey item, participants in relationships were asked to describe their partnerships as "entirely monogamous" (meaning you and your partner have agreed to be sexual only with each other and have indeed only been sexual with each other to your knowledge), "supposedly monogamous" (meaning you and your partner agreed to be sexual only with each other and one or both of you have engaged in sexual activities with other people but did not tell the other person or hid it from the other person; aka one of you "cheated" or had an affair), "open" (meaning that you and your partner have agreed that one or both of you can engage in sexual activities with other people), "not discussed," or "something else." Those who selected "something else" were provided with an option to describe their partnerships in greater detail, in an open answer format.

Participants who selected the first three options were classified as being in monogamous, nonconsensually nonmonogamous (NCNM), and open relationships, respectively. Those who selected "not discussed" were dropped. This was due to the impossibility of determining whether the partners involved had any expectations of monogamy or nonmonogamy, consensual or otherwise, in their current relationships. The first and third authors separately reviewed qualitative descriptions (in English and Spanish) among participants who selected "something else" to identify other instances of monogamous, NCNM, and open relationships. For example, one participant noted that "my boyfriend is in the military, and we have an open, nonexclusive relationship because of the distance." Any inconsistencies were discussed in coding meetings until the first and third authors reached consensus.

Data Analysis—Bivariate analyses (chi-square for categorical and ANOVA for continuous measures) were used to explore associations between relationship structure and demographic characteristics. All measures were then incorporated into a multinomial logistic regression model to identify correlates with relationship structure, with monogamy as the reference outcome. Though some items such as sex, age, and household income were nonsignificant in bivariate analyses, we retained them due to emphases in previous research (Conley et al., 2012b; Klesse, 2006; Rubel & Bogaert, 2015). We utilized bivariate and multivariable regression models to explore associations between relationship structure and testing behaviors (logistic), condom use (linear), and relationship satisfaction (linear). Multivariable models were adjusted for sex, sexuality, age, and race/ethnicity. Only participants who reported engaging in vaginal ($n = 1680$) and anal ($n = 318$) intercourse were retained for those outcomes. Approximately 1% of participants were missing from one or both relationship satisfaction measures; we dropped those cases rather than impute values for such minor data loss.

Although this investigation focused primarily on relationship structure in the broader US population, we conducted additional bivariate analyses to explore participation in monogamy, nonconsensual nonmonogamy, and open relationships among individuals with different sexual orientations. We conducted these analyses with the whole sample and also stratified by sex.

Results

Sample characteristics, including differences by relationship structure, are included in Table 1. Approximately 89% of participants ($n = 2110$) reported being in monogamous partnerships, 4% reported CNM ($n = 83$), and 8% reported NCNM ($n = 178$). This indicates that people in CNM comprised 2.6% of the initial sample (all NSSHB respondents, including participants who were not in relationships and were thus excluded from the analyses below). Gay/lesbian and bisexual participants were less likely to report monogamy and more likely to report both CNM and NCNM ($p < .001$); indeed, these participants collectively comprised only 5% of the initial sample, but 38% of the CNM subgroup. Transgender participants were also more likely to report CNM, comprising 1% of the overall sample and 4% of the CNM subgroup ($p < .05$). There was some racial/ethnic variation, with Other, Non-Hispanic participants more likely to report CNM and Black, Non-Hispanic participants more likely to report CNM and NCNM ($p < .01$). Relationship structure was not associated with sex, education, or household income in bivariate analyses.

As noted above, additional bivariate analyses addressed relationship structures among participants with different sexual orientations. For this exploratory analysis, we retained all original categories for sexual orientation described above. When analyzing the whole sample, approximately 2% of heterosexual participants, 32% of gay participants, 5% of lesbian participants, 22% of bisexual participants, and 14% of those who described their sexualities as “other” reported being in open relationships; approximately 8% of heterosexual participants, 14% of gay participants, 6% of lesbian participants, 18% of bisexual participants, and 6% of those who selected “other” for sexuality reported nonconsensual non-monogamy ($p < .001$). When analyzing male participants, approximately

3% of heterosexual males, 33% of gay males, 23% of bisexual males, and 24% of "other" males reported open relationships; approximately 8% of heterosexual males, 14% of gay males, 34% of bisexual males, and 6% of "other" males reported nonconsensual nonmonogamy ($p < .001$; no males selected "lesbian" for their sexuality). When analyzing female participants, approximately 2% of heterosexual females, 0% of gay females, 5% of lesbian females, 22% of bisexual females, and 8% of "other" females reported open relationships; approximately 7% of heterosexual females, 0% of gay females, 6% of lesbian females, 12% of bisexual females, and 6% of "other" females reported nonconsensual nonmonogamy ($p < .001$; six females identified as gay, and all of them further described their relationships as monogamous). These results are not presented in a table.

Correlates of Relationship Structure

All variables were incorporated into a multinomial logistic regression model to identify correlates of relationship structure, using monogamy as the reference group (see Table 2). As mentioned above, items that had not been significantly associated with relationship structure in bivariate analyses were retained in the model based on prior literature associating men and people of higher socioeconomic status with nonmonogamy (e.g., Klesse, 2013). Sex reached significance in the multinomial regression. Female participants were significantly less likely than males to report open relationships (OR = 0.53, 95% CI = 0.29–0.96, $p < .05$). Transgender identity lost significance as a correlate in the multivariable model. Gay/lesbian and bisexual/other individuals were substantially more likely than heterosexual individuals to report open relationships (OR = 25.16, 95% CI = 11.91–53.15; OR = 11.62, 95% CI = 3.91–34.54; respectively; $p < .001$). Bisexual/other individuals were also more likely than heterosexual individuals to report NCNM, though the differences were less pronounced (OR = 2.15, 95% CI = 1.17–3.93, $p < .05$). Relative to those aged 18–24, participants aged 25–34, 45–54, and 65+ were less likely to report NCNM (OR = 0.30, 95% CI = 0.14–0.64, $p < .01$; OR = 0.52, 95% CI = 0.32–0.85, $p < .05$; OR = 0.38, 95% CI = 0.23–0.62, $p < .001$; respectively). Other, Non-Hispanic participants were more than twice as likely as Whites to report open relationships (OR = 2.39, 95% CI = 1.05–5.44, $p < .05$). Black participants were more likely than Whites to report NCNM (OR = 2.20, 95% CI = 1.35–5.39, $p < .01$). Consistent with bivariate analyses, neither income nor education was associated with relationship structure.

Additional Outcome Measures

Table 3 includes descriptive statistics for testing behaviors, condom use, and relationship satisfaction by relationship structure. Fewer than 10% of participants in monogamous relationships reported STI or HIV testing in the previous 6 months, whereas 14–17% of open relationship and NCNM participants reported testing. Participants in open relationships reported the highest frequency of condom use in the previous 10 incidents, both for vaginal ($M = 3.43$, SD = 3.99) and anal intercourse ($M = 4.60$, SD = 4.41). Monogamous participants reported the lowest frequency of condom use for vaginal intercourse ($M = 1.46$, SD = 3.24), and NCNM participants reported the lowest frequency of condom use for anal intercourse ($M = 1.23$, SD = 3.15). On average, participants monogamous partnerships rated their overall happiness in primary relationships between "happy" (4 out of 7) and "very happy" (5 out of 7; $M = 4.45$, SD = 1.68), whereas open and NCNM participants rated their

overall happiness in primary relationships between “a little unhappy” (3 out of 7) and “happy” (M = 3.99, SD = 1.51; M = 3.71, SD = 1.28; respectively). All participants rated their sexual satisfaction in primary relationships in the past 4 weeks between “equally satisfied and dissatisfied” (3 out of 5) and “moderately satisfied” (4 out of 5), with the highest ratings among monogamous participants and the lowest ratings in the NCNM group.

Testing Behaviors

Table 4 includes logistic regression of testing behaviors and linear regression of condom use and relationship satisfaction by relationship agreement, using monogamous participants as the reference group. We also ran these models using participants in open relationships as the reference group; though we do not show those results in a table, we report all significant differences between open and NCNM participants below. In bivariate models, open and NCNM participants were both more likely than monogamous participants to report STI and HIV testing in the previous 6 months (for HIV testing, OR = 2.23, 95% CI = 1.08–4.61, p < .05 for open relationships; OR = 2.05, 95% CI = 1.14–3.68, p < .05 for NCNM; for STI testing, OR = 3.01, 95% CI = 1.59–5.68, p < .01 for open relationships; OR = 2.31, 95% CI = 1.12–4.78, p < .05 for NCNM). In multivariable models, NCNM participants were significantly more likely than monogamous participants to report HIV testing (aOR = 1.89, 95% CI = 1.03–3.47, p < .05).

Condom Use

Participants in open relationships reported significantly more condom use in the previous 10 incidents for vaginal intercourse than those in monogamous partnerships in bivariate models (b = 1.97, 95% CI = 0.57–3.37, p < .01), as well as significantly more condom use for anal intercourse in both models (b = 3.16, 95% CI = 1.39–4.94, p < .01; ab = 2.75, 95% CI = 0.89–4.61, p < .01). There were no significant differences between the monogamous and NCNM groups, either in bivariate or in multivariable models. When treated as the reference group, participants in open relationships also reported more condom use for anal intercourse than NCNM participants (ab = 3.29, 95% CI = − 4.81 to − 1.76, p < .001).

Relationship Happiness and Sexual Satisfaction

Both open relationship and NCNM participants reported lower overall happiness in primary relationships than monogamous participants (ab = − 0.47, 95% CI = − 0.87 to − 0.07, p < .05 for open relationships; ab = − 0.69, 95% CI = − 0.98 to − 0.40, p < .001 for NCNM). The same was true for sexual satisfaction (ab = − 0.48, 95% CI = − 0.89 to − 0.08, p < .05 for open relationships; ab = − 0.55, 95% CI = − 0.90 to − 0.21, p < .01 for NCNM).

Discussion

In this nationally representative probability sample of U.S. adults, 2.6% of participants—or 4% of those presently in relationships—reported present engagement in open relationships. These figures are somewhat comparable to current estimates for the LGBT population (Gates, 2011), and previous prevalence estimates for consensual nonmonogamy more broadly (Conley et al., 2012a; Hutzer et al., 2016). They should also be regarded as rather conservative estimates, as they exclude people who are presently not in relationships but are

oriented toward open relationships, who have previously engaged in open relationships but currently do not, and who are presently in monogamous or NCNM partnerships but are not opposed to open relationships. We further documented that approximately 5.5% of the original sample, or 8% of participants in relationships, reported nonconsensual nonmonogamy. This should also be regarded as a conservative estimate due to its emphasis on present circumstances. Moreover, participants in ostensibly monogamous relationships who were unaware that their partners had engaged in extradyadic sex, or had done so themselves but were reluctant to reveal this in the survey, are missing from this figure. Consequently, it is reasonable to assume that most care providers will encounter people in open relationships as well as other members of the broader CNM community in their practice, as well as individuals in NCNM partnerships. These data reinforce previous calls for medical professionals, social workers, therapists, and other providers to educate themselves about open relationships and other forms of CNM, and for educational programs to incorporate content specific to consensual nonmonogamies.

Analyses produced some surprising findings about the demographic makeup of individuals who participate in open relationships. Whereas previous research with polyamorous communities had depicted this subgroup as predominantly White and affluent (Klesse, 2013), in this study, Other, Non-Hispanic persons were more likely than Whites to report open relationships, and neither education nor income were associated with relationship structure. This diverges from Rubin, Moors, Matsick, Ziegler, and Conley (2014) finding that race/ethnicity is not associated with relationship structure, but also confirms their finding that Whites are not overrepresented across CNM partnerships. Perhaps the relative privilege within networked polyamorous communities does not extend to open relationships or the broader world of CNM relationships.

Associations among sex, sexual orientation, and relationship structure warrant further investigation with representative samples. Several researchers have noted that some forms of CNM, such as polyamory, seem particularly common among sexual and gender minorities (e.g., Klesse 2013; Rubin et al., 2014). While some studies indicate that gay and bisexual males are particularly likely to engage in CNM, others argue that lesbian and bisexual women have been neglected in empirical research, which makes such patterns difficult to substantiate (Rubel & Bogaert, 2015). Rubin et al. (2014) documented complex patterns, finding that males and sexual minorities were overrepresented within CNM partnerships, but also finding that sex and sexual orientation were not significantly associated with relationship structure. Looking specifically at sexual minority populations, Moors, Rubin, Matsick, Ziegler, and Conley (2014) found that men and women were equally inclined toward consensual non-monogamy. The present study certainly documented that males and sexual minorities were overrepresented within open relationships. However, females comprised a substantial minority of the open relationship sample (39%), and heterosexual individuals comprised a majority (61%). One benefit of working with NSSHB data is that, in 2012, this study oversampled sexual minority persons and provided distinct post-stratification weights for analyzing subsamples of gay, lesbian, and bisexual participants (Dodge et al., 2016). Our research team is presently working on a follow-up analysis to explore relationship structures in these communities.

Findings from this study diverged from prior research concerning relationship structure and testing behaviors, condom use, and relationship satisfaction. Working with an online nonprobability sample, Lehmiller (2015) documented more STI testing and condom use among individuals in consensually nonmonogamous partnerships than individuals in monogamous partnerships. We found no differences in testing and documented significantly greater condom use among participants in open relationships for anal intercourse. Based on a comprehensive review of the literature, Rubel and Bogaert (2015) found that individuals in CNM partnerships tended to report equal or greater relationship satisfaction relative to those in monogamous partnerships (see also Conley, Matsick, Moors, & Ziegler, 2017). In contrast, we documented lower reported relationship happiness and sexual satisfaction among individuals in open relationships. Yet for all these divergences, our findings also aligned with some previous work on relationship structure. The present study reinforces existing challenges to the assumption that monogamy is an effective and ideal strategy for addressing sexual risk, including but not limited to HIV/STI transmission (Conley et al., 2015; Swan & Thompson, 2016).

There are several potential reasons for these discrepancies and commonalities. Variation in sampling techniques, particularly the reliance in nonprobability sampling across many previous studies, may play a role. It is also possible that variation within samples regarding participant demographics and the types of CNM represented affect these data. Different approaches to study design and data analysis are also important to consider. For example, Lehmiller (2015) compared CNM and monogamous participants and asked about general condom use; we compared open, NCNM, and monogamous participants and distinguished between condom use in penile–vaginal and penile–anal sex acts. The findings in this study are particular to open relationships and should not be generalized to all forms of consensual non-monogamy. Regardless, the scope of discrepancies between present findings and prior research warrants investigation in its own right. More attention toward relationship structure in sexuality research, along with in-depth consideration of different methodological techniques, should help to produce a more comprehensive picture of safer sex practices, testing, and satisfaction across relationship types. Concepts such as “risk” and “safer sex” should be modified where appropriate to reflect diverse relationship structures.

It is possible that relationship and sexual satisfaction function differently in open relationships and other forms of CNM, such as polyamory or swinging. People in different relationship structures—monogamy, open relationships, other forms of CNM—may further tend to conceptualize satisfaction differently. Were this the case, a lower average might not necessarily indicate lower satisfaction, but rather different standards for measuring satisfaction. Comparing such reports is challenging even within these communities, due to personal variation. Qualitative or mixed methods assessments are needed to explore such complexity in greater depth.

Finally, this study highlights the importance of distinguishing among relationship structures in research and practice. In addition to established concerns regarding stereotyping and related barriers to care, we documented significant differences in terms of sexual risk. Only NCNM participants reported more HIV testing than monogamous participants; however, when comparing open and NCNM groups directly, we found no significant differences in

reported STI or HIV testing. Individuals in open relationships reported more consistent condom use than those in monogamous and nonconsensually nonmonogamous relationships, particularly for anal sex. This may not represent a cause for much concern for the former population; provided that neither partner is HIV positive or has an STI, and pregnancy is either not possible or not unwelcome, monogamy in itself functions as a protective factor. Such disparities are definitely concerning, though, regarding HIV/STI risks in NCNM contexts. Perhaps the structure of open relationships can facilitate discussions about safer sex practices and HIV/STI transmission, whereas the secrecy and mistrust in NCNM partnerships do the opposite (Conley et al., 2012b, 2013; Lehmiller, 2015). Researchers and providers who specialize in sexual health and behavior might approach the open communication and overall relationship satisfaction in consensual nonmonogamy as protective factors, while further considering the capacity for nonconsensual nonmonogamy to contribute to sexual risk behaviors.

Future research should explore variation in relationship happiness and sexual satisfaction in greater detail. In this study, differences between open relationships and monogamy were less pronounced than those between NCNM and monogamy (though we did not document significant differences between open and NCNM participants on these measures). However, these concepts are quite difficult to assess quantitatively, particularly when considering the complex variation within our categories of monogamous, open, and NCNM partnerships. Minority stress and the related pressures of having being in a potentially concealable and highly stigmatized relationship/community may certainly affect relationship quality and overall well-being. There is a substantial literature on other sexual minority populations, including but not limited to those in open relationships and other CNM partnerships, that indicates such effects (e.g., Clair, Beatty, & Maclean, 2005; Conley et al., 2012a, 2012b; Jones & King, 2014). Moreover, stigmatizing experiences and relationship quality vary considerably across and within different forms of consensual nonmonogamy (Conley et al., 2017).

Limitations and Future Directions

This study had several limitations that might be addressed in subsequent research. Our measure for relationship structure may not fully capture the diversity of expressions found in open and other CNM relationships at any given time, highlighting the complexity of assessing diversity in sexual relationships, in general. We relied entirely on one survey item, which had not been subjected to validity testing. However, this item was developed through a collaboration among researchers, educators, and community members with personal and/or professional experience that addressed each of the relationship structures assessed. The NCNM category combined individuals who had cheated with those whose partners had cheated (or who believed their partners had cheated); it would be productive to explore differences within this group and perhaps also to attempt to distinguish participants who suspected their “supposedly monogamous” partners of engaging in extradyadic sex from those who knew this had occurred (e.g., whose partners had disclosed this to them). Data limitations further precluded an incorporation of various CNM subgroups such as swingers and polyamorists, as well as assessments of differences within and among these subgroups. Moreover, it is possible that we missed some individuals presently involved in relationships

that might be classified as monogamous, open, or nonconsensually nonmonogamous if these participants selected “other” in the initial relationship structure question and declined to provide clear descriptions of their partnerships. Subsequent studies should include a broader range of response options for describing CNM partnerships; however, we recommend retaining the “other” response and option for qualitative elaboration for participants who do not feel that close-ended survey items adequately reflect their relationships. In the present study, many participants provided qualitative descriptions in English and Spanish of their relationship structures via the “other” text box, and their responses were incorporated into quantitative analyses as appropriate.

Other limitations concerned outcome measures. Items for condom use did not distinguish between intercourse within and outside of primary relationships, nor did they capture recent advances in biomedical HIV prevention such as pre-exposure prophylaxis (PrEP) and treatment as prevention (TasP). Outcomes for relationship satisfaction were insufficiently nuanced to consider the different meanings that participants might attach to concepts like happiness and sexual satisfaction, or any potential variation in such matters by relationship structure. The emphasis on primary relationships for condom use and satisfaction measures may have been inappropriate or inaccessible for nonmonogamous participants whose relationships were not hierarchical (i.e., for those who did not distinguish between “main” and “secondary” or “casual” relationships). Future research and programmatic interventions should expand models of relationships beyond “couples and dyads” to encompass a broader range of sexual and romantic partnerships.

While this investigation provided previously lacking information regarding the scope and correlates of participation in open relationships, as well as associated sexual behaviors and experiences of relationship satisfaction, it did not broaden scientific understanding of stigmatizing experiences of the impact of such experiences on behavior and well-being. Subsequent studies should investigate this in greater detail, while also building on the findings documented here. Previous work on discrimination in therapy and medical care, for example, might be broadened to include a more diverse population in regard to race/ethnicity, socioeconomic status, and form of CNM. The same may be said of research on familial, partner, and other social support for people who engage in and/or are oriented toward open relationships and other forms of nonmonogamy.

Finally, longitudinal approaches might serve to illuminate changes in relationship structure over time, both within and across romantic and/or sexual partnerships. Such work might also address shifts in safer sex practices, testing behaviors, and relationship satisfaction and happiness, as well as the varying responses of care providers, legal institutions, and friends and family members to different monogamous and nonmonogamous relationships. Our team is presently designing a longitudinal study on relationship structure using multiple waves of nationally representative data.

Conclusion

Consensually nonmonogamous partnerships, including open relationships, comprise a substantial proportion of romantic and sexual relationships in the U.S. Those who choose such partnerships represent a sexual minority comparable in size than the LGBT community.

Moreover, while there is a considerable overlap between open relationship (and broader CNM) and LGBT populations, there are numerous heterosexual individuals who embrace consensual nonmonogamy but are rarely considered in research on sexual minorities. Risk and protective factors within open and other CNM relationships should be regarded as unique, rather than conflated with those common to monogamous and/or NCNM relationships. Unfortunately, the persistence of negative stereotyping among medical and mental healthcare providers, along with the frequent collapsing of consensual and nonconsensual nonmonogamy in studies of concurrent sexual partnerships, contribute to disparities in health and access to care. Findings from this study highlight an urgent need for greater awareness of consensual nonmonogamy among researchers and providers, and the incorporation of CNM-specific content into educational programming in diverse fields such as medicine, sexual health, and counseling.

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Table 1

Demographic characteristics by relationship structure

	Full sample *n* (%)	Monogamy *n* (%)	Open *n* (%)	NCNM *n* (%)
Relationship structure				
Monogamy	2010 (89%)	–	–	–
Open relationship	83 (4%)	–	–	–
Nonconsensual nonmonogamy	178 (8%)	–	–	–
Sex				
Male	1098 (48%)	962 (48%)	50 (61%)	86 (49%)
Female	1172 (52%)	1048 (52%)	32 (39%)	91 (51%)
Sexuality[c]				
Heterosexual/straight	2155 (94%)	1937 (96%)	51 (61%)	166 (94%)
Gay/lesbian	58 (3%)	34 (2%)	19 (23%)	4 (2%)
Bisexual/other	58 (3%)	38 (2%)	12 (15%)	8 (4%)
Gender identity[a]				
Transgender	23 (1%)	19 (1%)	3 (4%)	1 (0%)
Nontransgender	2248 (99%)	1991 (99%)	80 (96%)	177 (100%)
Age				
18–24	169 (7%)	134 (7%)	11 (13%)	24 (14%)
25–34	510 (22%)	470 (23%)	15 (19%)	15 (14%)
35–44	434 (19%)	370 (18%)	22 (27%)	42 (24%)
45–54	397 (17%)	347 (17%)	17 (20%)	33 (18%)
55–64	423 (19%)	380 (19%)	10 (12%)	33 (18%)
65+	338 (15%)	309 (15%)	8 (9%)	21 (12%)
Household income				
Under $10,000	99 (4%)	83 (4%)	6 (7%)	10 (6%)
$10,000–29,999	329 (15%)	271 (13%)	19 (22%)	41 (23%)
$30,000–49,999	395 (17%)	366 (18%)	13 (16%)	17 (9%)
$50,000–74,999	439 (19%)	395 (20%)	13 (16%)	31 (19%)
$75–99,999	376 (17%)	331 (16%)	12 (15%)	33 (19%)
$100,000 or more	631 (28%)	564 (28%)	21 (25%)	46 (26%)
Education				
Less than high school	235 (10%)	193 (10%)	14 (17%)	27 (16%)
High school	679 (30%)	607 (30%)	19 (23%)	53 (30%)
Some college	648 (29%)	566 (28%)	28 (34%)	54 (30%)
Bachelor’s or higher	708 (31%)	644 (32%)	21 (26%)	43 (24%)
Race/ethnicity[b]				
White, Non-Hispanic	1568 (69%)	1413 (70%)	44 (53%)	111 (62%)
Black, Non-Hispanic	228 (10%)	183 (9%)	13 (16%)	32 (18%)
Other, Non-Hispanic	153 (7%)	137 (7%)	11 (13%)	5 (3%)
Hispanic	322 (14%)	277 (14%)	15 (18%)	30 (17%)

All values represent weighted data (weighted $N = 2270$)

[a] $p < .05$;

[b] $p < .01$;

[c] $p < .001$ in chi-square analysis

Table 2

Multinomial logistic regression of relationship structure by demographic characteristics

	Open relationship		Nonconsensual nonmonogamy	
	OR	**95% CI**	**OR**	**95% CI**
Sex (female)	0.53 *	0.29–0.96	0.94	0.63–1.42
Gender identity (transgender)	0.50	0.07–3.58	4.08	0.68–25.53
Sexuality (reference: heterosexual)				
Gay/lesbian	25.16 ***	11.91–53.15	1.61	0.45–5.76
Bisexual/other	11.62 ***	3.91–34.54	2.15 *	1.17–3.93
Age (reference: 18–24)				
25–34	0.39	0.12–1.23	0.30 **	0.14–0.64
35–44	0.93	0.34–2.52	0.64	0.30–1.34
45–54	0.64	0.19–2.09	0.52 *	0.32–0.85
55–64	0.37	0.11–1.26	0.50	0.24–1.01
65+	0.42	0.07–2.37	0.38 ***	0.23–0.62
Household income	0.95	0.83–1.08	1.01	0.91–1.12
Education (reference: less than high school)				
High school	0.50	0.23–1.08	0.68	0.34–1.35
Some college	0.78	0.23–2.73	0.70	0.35–1.40
Bachelor's or higher	0.49	0.17–1.41	0.57	0.25–1.29
Race/ethnicity (reference: White, Non-Hispanic)				
Black, Non-Hispanic	2.21	0.67–7.24	2.20 **	1.35–3.59
Other, Non-Hispanic	2.39 *	1.05–5.44	0.45	0.17–1.14
Hispanic	0.96	0.43–2.15	1.21	0.73–2.03

Reference group for the logistic regression model was monogamy. Overall model is significant ($p < .001$)

Household income incorporated as a linear predictor, using a scale ranging from 0 (under $10,000) to 9 ($100,000 or more)

* $p < .05$;

** $p < .01$;

*** $p < .001$

Table 3

Descriptive statistics for testing behaviors, condom use, and relationship satisfaction by relationship structure

	Full sample ***n*** **(%) or** ***M*** **(SD)**	**Monogamy** ***n*** **(%) or** ***M*** **(SD)**	**Open relationship** ***n*** **(%) or** ***M*** **(SD)**	**Nonconsensual nonmonogamy** ***n*** **(%) or** ***M*** **(SD)**
STI testing in previous 6 months (*N* = 2270)	170 (7%)	131 (7%)	14 (17%)	25 (14%)
HIV testing in previous 6 months (*N* = 2270)	194 (9%)	155 (8%)	13 (16%)	26 (15%)
Condom use for vaginal intercourse (*N* = 1680)	1.55 (3.30)	1.46 (3.24)	3.43 (3.99)	1.94 (3.47)
Condom use for anal intercourse (*N* = 318)	1.78 (3.50)	1.43 (3.19)	4.60 (4.41)	1.23 (3.15)
Happiness in primary relationship (*N* = 2265)	4.37 (1.66)	4.45 (1.68)	3.99 (1.51)	3.71 (1.28)
Sexual satisfaction in primary relationship (*N* = 2248)	3.56 (1.30)	3.62 (1.29)	3.17 (1.35)	3.09 (1.25)

All values represent weighted data

All means for condom use refer to the previous 10 incidents. Happiness was assessed on a scale ranging from 1 (very unhappy) to 7 (perfect), and sexual satisfaction was assessed on a scale ranging from 1 (very dissatisfied) to 5 (very satisfied)

Table 4

Logistic regression of STI/HIV testing behaviors and linear regression of condom use and relationship satisfaction by relationship structure

	OR	95% CI	Adjusted OR	95% CI
STI testing in previous 6 months (N = 2270)				
Open relationship	3.01**	1.59–5.68	1.79	0.83–3.87
Nonconsensual nonmonogamy (NCNM)	2.31*	1.12–4.78	2.07	0.93–4.61
HIV testing in previous 6 months (N = 2270)				
Open relationship	2.23*	1.08–4.61	1.41	0.62–3.20
Nonconsensual nonmonogamy (NCNM)	2.05*	1.14–3.68	1.89*	1.03–3.47
	b	95% CI	Adjusted *b*	95% CI
Condom use for vaginal intercourse (N = 1680)				
Open relationship	1.97**	0.57–3.37	1.25	− 0.13–2.63
Nonconsensual nonmonogamy (NCNM)	0.48	− 0.21–1.17	0.16	− 0.48–0.80
Condom use for anal intercourse (N = 318)				
Open relationship	3.16**	1.39–4.94	2.75**	0.89–4.61
Nonconsensual nonmonogamy (NCNM)	− 0.20	− 1.38–0.98	− 0.54	− 1.80–0.73
Happiness with primary relationship (N = 2265)				
Open relationship	− 0.45**	− 0.76–0.15	− 0.47*	− 0.87–0.07
Nonconsensual nonmonogamy (NCNM)	− 0.73***	− 1.01–0.46	− 0.69***	− 0.98–0.40
Sexual satisfaction in primary relationship (N = 2248)				
Open relationship	− 0.45*	− 0.82–0.08	− 0.48*	− 0.89–0.08
Nonconsensual nonmonogamy (NCNM)	− 0.53**	− 0.88–0.18	− 0.55**	− 0.90–0.21

Reference group for all models is monogamy

Adjusted ORs and *b* coefficients control for sex, sexuality, age, and race/ethnicity

All values refer to weighted data

All means for condom use refer to the previous 10 incidents. Happiness was assessed on a scale ranging from 1 (very unhappy) to 7 (perfect), and sexual satisfaction was assessed on a scale ranging from 1 (very dissatisfied) to 5 (very satisfied)

* $p < .05$;

** $p < .01$;

*** $p < .001$